

IN THE CLAIMS

The claims in the listing will replace all prior claims in the application.

1. (Currently Amended) A method for sterilizing an article in a sterilization gas atmosphere, comprising the steps of:
 - (a) providing a sterilization chamber;
 - (b) placing the article into the sterilization chamber;
 - (c) ~~equalizing the temperature of the article and an atmosphere in the sterilization chamber~~ sealing the sterilization chamber;
 - (d) applying a vacuum to the sterilization chamber for adjusting the pressure in the sterilization chamber to a sterilization pressure lowering at which the boiling point of water in the sterilization chamber is lowered to a temperature below the temperature in the sterilization chamber;
 - (e) supplying an amount of water to the sterilization chamber for humidifying the atmosphere in the sterilization chamber;
 - (f) supplying ozone-containing sterilization gas to the sterilization chamber;
 - (g) maintaining the sterilization pressure in the sterilization chamber for a preselected treatment period; and
 - (h) releasing the vacuum in the sterilization chamber, wherein prior to step (d), the temperature of the article is equalized with the temperature of an atmosphere in the sterilization chamber to prevent condensation of water on the article due to localized

temperature differentials when the relative humidity
in the sterilization chamber approaches saturation.

2. (Previously presented) The method of claim 1, wherein the step of equalizing includes equalizing the temperature of the article, the atmosphere in the sterilization chamber and any components and materials in contact with the atmosphere.

3. (Currently amended) The method of claim 1, ~~when~~ operated at a temperature in the sterilization chamber of 25 to 40°C.

4. (Previously presented) The method of claim 3, operated at a temperature of 25 to 35°C.

5. (Currently amended) The method of ~~any one of claims 1 to 3~~
claim 1, wherein the vacuum pressure is between 0,1 and 10 mbar.

6. (Previously presented) The method of claim 5, wherein the vacuum pressure is between 0,5 and 2 mbar.

7. (Previously presented) The method of claim 1, wherein the amount of water is selected to achieve a level of humidity in the sterilization chamber of 85 to 100%.

8. (Previously presented) The method of claim 7, wherein the amount of water is selected to achieve a level of humidity of at least 95%.

9. (Currently amended) The method of claim 1, wherein the steps ~~(e) to (f)~~ (d) to (g) are repeated at least once.

10. (Currently amended) The method of claim 9, wherein the steps ~~(e) to (f)~~ (d) to (g) are repeated a number of times sufficient to ensure complete sterilization of the article.

11. (Previously presented) The method of claim 1, further comprising the step of passing all gases evacuated from the sterilization chamber through a means for destroying ozone to prevent emission of ozone to the atmosphere.

12. (Currently amended) A sterilization apparatus for the sterilization of an article, comprising

a vacuum sterilization chamber;

means for equalizing the temperature of the article and an atmosphere in the sterilization chamber to prevent condensation of water on the article due to localized temperature differentials;

means for supplying ozone-containing sterilization gas to the sterilization chamber;

means for supplying water vapour to the sterilization chamber; and

means for applying a sufficient vacuum to the sterilization chamber to lower the boiling temperature of water below the temperature inside the sterilization chamber.

13. (Previously presented) The apparatus of claim 12, further comprising means for maintaining the sterilization pressure in the sterilization chamber for a preselected sterilization period.

14. (Previously presented) The apparatus of claim 12, wherein the means for applying include a door for sealing the

sterilization chamber, the means for supplying water vapour include a humidifier with a water reservoir, and the apparatus further comprises a means for controlling the temperature of the chamber, the door, the humidifier and the water reservoir.

15. (Previously presented) The apparatus of claim 12, wherein the means for applying a sufficient vacuum include means for adjusting the pressure of the vacuum to a sterilization pressure at which any water in the sterilization chamber is in the vapour phase.

16. (Previously presented) The apparatus of claim 12, further comprising means for destroying ozone contained in sterilization gas evacuated from the sterilization chamber.

17. (Previously presented) The apparatus of claim 12, wherein the means for supplying ozone-containing sterilization gas is at least one ozone generator.

18. (Previously presented) The apparatus of claim 12, wherein the means for applying vacuum is a vacuum pump capable of generating a vacuum pressure at least as low as 55.3 mbar.

19. (Previously presented) The apparatus of claim 18, wherein the vacuum pump generates a vacuum pressure at least as low as 22.6 mbar.

20. (Previously presented) The apparatus of claim 19, wherein the vacuum pump generates a vacuum pressure below 1.0 mbar.

21. (Previously presented) The apparatus of claim 12, further comprising a means for monitoring a level of ozone in the sterilization chamber.

22. (Previously presented) The apparatus of claim 12, further comprising means for monitoring and adjusting the vacuum pressure in the sterilization chamber.

23. (Previously presented) The apparatus of claim 21 or 22, further comprising a means for controlling the operation of the apparatus by controlling the means for supplying water vapour and the means for applying vacuum in response to information on the ozone concentration and the vacuum pressure in the sterilization chamber, respectively provided by the means for monitoring the ozone level and the means for monitoring the vacuum pressure.

24. (New) The method of claim 1, wherein the step of equalizing includes multiple steps of evacuating the sterilization chamber and intermediate steps of flushing the sterilization chamber with oxygen or ambient air.

25. (New) The method of claim 24, wherein the oxygen or ambient air are at ambient temperature.